

Application No. 10/775,979

Reply to Office Action

**REMARKS****Discussion of Claim Amendments**

Claims 1-3 have been amended to recite that the composition contains methyl ethyl ketone and/or acetone as solvent. Dependent claims 17-18 also have been amended accordingly. Claims 1-3 have also been amended to delete the limitation relating to the amount of slow evaporating solvents (less than 5%) as unnecessary. Claim 3 has been further amended to recite an evaporation rate. No new matter has been added.

**The Office Action**

The Office Action sets forth the following grounds for rejection:

1. Claims 1-3 are rejected under 35 U.S.C. § 112, second paragraph, for an alleged indefiniteness;
2. Claims 1, 3-5, 10, 12-13, 15, 17-20, and 22 are rejected under 35 U.S.C. § 102(e), as allegedly anticipated by Zou et al. (USP 6,726,756); and
3. Claims 2, 6-9, 11, 14, 16, 21, and 23-27 are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Zou et al.

**Discussion of Indefiniteness Rejection**

Applicants have amended claims 1 and 3, as discussed, to delete the limitation relating to the amount of slow evaporating solvents. Claim 3 has been amended to recite an evaporation rate. Accordingly, claims 1-3 meet the requirement under Section 112, second paragraph, and the rejection should be removed.

**Discussion of Anticipation Rejection**

Claims 1, 3-5, 10, 12-13, 15, 17-20, and 22 are rejected as allegedly anticipated by Zou et al.

Applicants have amended independent claims 1 and 3, as indicated. Zou et al. fails to disclose a jet ink composition containing methyl ethyl ketone and/or acetone in combination with a rosin resin. While Example 3 of Zou et al. shows Ink Formulation No. 7 containing methyl ethyl ketone, there is no rosin resin in the formulation. In addition, this formulation (No. 7) appears to be a comparative example having high make-up consumption (140 g/24

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hours) due to the presence of a large amount of methyl ethyl ketone and a small amount of the slow evaporating solvent 1-methoxy-2-propanol; see col. 8, lines 40-41. The ink compositions of Zou et al. require greater amounts of the slow evaporating solvent (see col. 3, lines 15-29: "at least about 30% or more, preferably 50% or more, and more preferably about 60% or more of a solvent or a solvent blend that has an evaporation rate of up to about 1.5 ( $\pm 0.2$ ) relative to n-butyl acetate standard"). Claim 5 has been canceled.

In view of the foregoing, Zou et al. fails to disclose the subject matter of claims 1 and 3, and their dependent claims 4, 10, 12-13, 15, 17-20, and 22. Accordingly, the anticipation rejection should be withdrawn.

#### Discussion of Obviousness Rejection

Claims 2, 6-9, 11, 14, 16, 21, and 23-27 are rejected as allegedly unpatentable over Zou et al.

Claim 2 is independent. Claim 6 has been canceled. Claims 7-9, 14, 16, 21, and 23-27 are directly or indirectly dependent upon independent claim 1. Claim 11 is dependent upon independent claim 3. As discussed, independent claims 1 and 3 have been amended to recite that the jet ink composition contains methyl ethyl ketone and/or acetone.

Zou et al. attempts to solve the problem of evaporation of the ink solvent from the ink composition when it is in the printer. As a solution to the problem, Zou et al. provides slow evaporating solvents and in large quantities. Accordingly, Zou et al. teaches away from the presently claimed invention. Those of ordinary skill in the art would not be motivated, in light of the teachings in Zou et al., to use fast evaporating solvents such as methyl ethyl ketone or acetone. To use a fast evaporating solvent would go against the teachings of the cited reference. As discussed, the formulation containing methyl ethyl ketone in Zou et al. is a comparative example. The Court of Appeals for the Federal Circuit has recognized that proceeding against the accepted wisdom in the art represents "strong evidence of unobviousness". See, *In re Hedges*, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983).

Further, even if the ink composition of Zou et al. is modified (for which there is no motivation), i.e., if the ink composition contains fast evaporating solvents and no slow evaporating solvents, such ink composition would destroy, or make inoperable, the intended function in Zou et al., i.e., it would be unsuitable for Zou et al.'s purpose, namely, to reduce

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or eliminate ink make-up, because the problem faced in Zou et al. is in fact due to the evaporation of fast evaporating solvents. When a proposed modification would destroy the intended function, motivation cannot exist. See, for example, *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992), which held that a proposed modification is inappropriate for an obviousness inquiry when the modification renders the prior art reference inoperable for its intended purpose.

Moreover, there is no suggestion to those of ordinary skill in the art to specifically combine a rosin resin and a vinyl resin as recited in claim 2. There is also no suggestion to provide an ink composition that is substantially free of slow evaporating solvents and substantially free of cellulose nitrate resin, as recited in claim 3.

In addition, the presently claimed invention has unexpected or superior properties such as reduced ink dry time, improved rub resistance, and improved scratch resistance, as set forth in the accompanying Declaration. As set forth in the Declaration, numbered paragraphs 4-7, a comparison has been made between ink jet ink compositions of the presently claimed invention and those of Zou et al.

Sample Nos. 3 and 4 correspond to ink jet ink compositions of the presently claimed invention illustrated in Examples 4 and 2, respectively, of the application. Sample No. 3 contains a rosin resin and methyl ethyl ketone, is free of cellulose nitrate resin, and is therefore, an embodiment of independent claim 3. Sample No. 4 contains methyl ethyl ketone, a rosin resin, and a vinyl resin (co-binder resin), and is therefore, an embodiment of independent claims 1-2.

Sample No. 1 corresponds to Ink Formulation No. 2 of Zou et al. and contains a polyketone resin, a rosin resin, and 1-methoxy-2-propanol. Sample No. 2 contains a rosin resin, a cellulose nitrate resin, 1-methoxy-2-propanol, and N-methyl pyrrolidone. 1-Methoxy-2-propanol and N-methyl pyrrolidone are slow evaporating solvents. Sample No. 2 corresponds to Ink Formulation No. 4 of Zou et al., except that the polyketone resin has been replaced with a rosin resin. The replacement was made in order to compare the effect of the combination of slow evaporating solvents, a rosin resin, and nitrocellulose vs. a combination having methyl ethyl ketone and rosin resin (and free of nitrocellulose) as in claim 3. Applicants respectfully submit that a comparison has been made with the closest embodiment of the cited reference.

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In view of all of the foregoing, the presently claimed invention should not be rejected as obvious over Zou et al.

Conclusion

The application is considered in good and proper form for allowance. The amendments place the application in condition for allowance or in a better condition for consideration on appeal. The Examiner is respectfully requested to enter the amendment.

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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Date: July 1, 2005

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